Ellipsis of Exhaustive Phrases in Japanese

Shuki Otani

1. Introduction

Japanese is the language where arguments can be dropped freely, unlike English.[1]

(1) *Taro washed his car, but Ziro didn't wash ⋀.

(2) a. Taro-wa zibun-no kuruma-o arat-ta.
Taro-TOP self-GEN car-ACC wash-PAST
lit: 'Taro washed self's car.'

b. Ziro-wa [e] arawa-nakat-ta.
Ziro-TOP wash-NEG-PAST
lit. 'Ziro didn't wash [e].'

c. Ziro-wa sore-o arawa-nakat-ta.
Ziro-TOP it-ACC wash-NEG-PAST
'Ziro didn't wash it.'

If the object of the verb is dropped as shown in (1), the sentence is ungrammatical in English. However, the example in (2b) is grammatical even if the object is dropped. The traditional analysis of the null arguments was to argue that they are uniformly empty pronouns *pro* (see Kuroda 1965, among many others). However, Otani and Whitman (1991) claim that it is not always the case that null arguments are corresponded to *pro*. If the null argument refers to the meaning (*zibun-no kuruma-o* 'self's car') in (2b), we can obtain two types of interpretation: 'Ziro did not wash Taro's car' and 'Ziroo did not wash Ziroo's car.' The former interpretation is called the strict reading, and the latter interpretation is called the sloppy reading. If the null argument is identical to *pro*, the argument in (2b) would also be analyzed in the same way. That is, the sentence in (2b) should have the same interpretation as the interpretation in (2c). The sentence in (2c) has the strict reading, but does not have the sloppy reading. The interpretation in (2c) is not consistent with the interpretation in (2b). Therefore, the *pro* analysis cannot account for the sloppy reading of the sentence in (2b). In the literature, the ellipsis analysis (Oku 1998, a.o.) can explain how the sloppy reading is derived. According to the ellipsis analysis, when a noun phrase including a self-anaphor like *zibun-no kuruma* 'self's car' is deleted, the sloppy reading is accessible.

It is well known that not only arguments in the object position but also those in the subject position can be dropped as in (3b) (cf. Oku 1998 a.o.).

[1]Hoji (1998) claims that sloppy identity of Japanese null arguments is a result of the use of null indefinite pronouns. However, Saito (2007) shows that Hoji's claim cannot explain the sloppy reading in negative sentences. Therefore, I use negative sentences in this paper.

(3) a. Taro-wa [zibun-no teian-ga saiyoosareru to] omotte-iru.
Taro-TOP self-GEN proposal-NOM accepted that think-PRES
'Taro thinks that his proposal will be accepted.'

b. Mary-mo [[e] saiyoosareru to] omotte-iru.
Mary-also accepted that think-PRES
'Mary also her / his proposal will be accepted.'

Like (2b), the sloppy reading is available in (3b). This means that the null argument in (3b) should be derived via the ellipsis analysis. As we have seen, it seems that any argument can be elided in Japanese. However, it is not the case that whatever is in an argument position is can be deleted. Let us consider the sentences in (4) (cf. Moriyama 2017).

(4) a. Taro-wa zibun-no kuruma-dake arat-ta.
Taro-TOP self-GEN car-only wash-PAST
lit: 'Taro washed only self's car.'

b. Demo, Ziro-wa [e] arawa-nakat-ta.
However, Ziro-TOP wash-NEG-PAST
lit. 'However, Ziro didn't wash [e]. ' (*focus reading / non-focus reading)

c. Demo, Ziro-wa [zibun-no kuruma-dake] arawa-nakat-ta.
However, Ziro-TOP self-GEN car-only wash-NEG-PAST
lit.'However, Ziro didn't wash only self's car.' (focus reading / *non-focus reading)

The sentence in (4b) does not have the meaning including *-dake* 'only'. In other words, it is very difficult to get the interpretation: "Ziro didn't wash only Ziro's car." In this paper, I call the interpretation with *-dake* 'focus reading'. Moriyama (2017) observes that it is possible to obtain the meaning without *-dake* 'only' when the focused phrase is dropped. We can get the interpretation: "Ziro didn't wash Ziro's car." I call the interpretation without *-dake* 'non-focus reading. As a piece of evidence that the null argument cannot be interpreted as 'only self's car', the sentence "he also didn't wash Mary's car, but washed Hanako's one" can follow the second sentence in (4b). If the null argument is understood as 'only self's car' as shown in (4c), the sentence is contradictory when the clause "he also didn't wash Mary's car, but washed Hanako's one" follows the sentence in (4c).

In addition, I note that we can obtain only the non-focus reading even when the null argument is in subject position.

(5) a. Hanako-wa [zibun-no musume-dake ringo-o tabe-nakat-ta to] omotte-iru.
Hakako-TOP self-GEN daughter-only apple-ACC eat-NEG-PAST that think-PRES
lit. 'Hanako thinks only self's daughter didn't eat an apple.'

b. Demo, Ziro-wa [[e] banana-o tabe-nakat-ta to] omotte-iru.
However, Ziro-TOP banana-ACC eat-NEG-PAST that think-PRES
lit. 'However, Ziro thinks [e] didn't eat a banana.'

c. Demo, Ziro-wa [[zibun-no musume-dake] banana-o tabe-nakat-ta to]
However, Ziro-TOP self-GEN daughter-only banana-ACC eat-NEG-PAST that
omotte-iru.
think-PRES
lit. 'However, Ziro thinks only self's daughter didn't eat a banana.'

The sentence in (5b) has only the non-focus reading. The sentence means that "Ziro thinks Ziro's

daughter didn't eat a banana." Moreover, (5b) sounds good even if it is followed by a sentence such as "he thought that Mary's daughter also didn't eat a banana but that Taro's daughter ate it." If the null argument in (5b) is interpreted as 'only self's daughter' as shown in (5c), the sentence will be contradictory in the situation where the sentence "he thought that Mary's daughter also didn't eat a banana but that Taro's daughter ate it" comes after (5c). Based on the discussion, (5b) indicates that the element (*zibun-no musume*) without *-dake* is null.

In this paper, I would like to give a possible explanation on the following questions on the null arguments in (4b) and (5b):

(6) Question

a. What is the null argument (= [e]) derived from?

b. Why do we obtain the interpretation without *-dake* when the null argument is dropped?

The rest of the paper is organized as follows. In Section 2, I review previous studies on the unavailability of focus reading when a focus operator such as *-dake* is null. These analyses can account for the issue on the unavailability of focus reading, but I point out that it is not sufficient to give a possible explanation on accessibility of non-focus reading. In order to explain the non-focus reading, I argue that an element without *-dake* must be copied and covertly merged into an empty slot in a second sentence. I claim that the argumentation is closely related to Morphological Merger (Shibata 2015) in section 3. In section 4, I show the analysis of the null arguments in (4b) and (5b). Section 5 is the conclusion of this paper.

2. Previous Research on Unavailability of Focus Reading

It has been observed in previous research that only the wide scope reading of *-dake* 'only' is available in (7). It is assumed in the previous research that the phrase with *dake* moves to a focus position outside VP (c.f. Funakoshi 2012 a.o.). The phrase should take scope over negation, as shown in (8).

(7) Taro-wa [kuruma-dake] arawa-nakat-ta.
Taro-TOP car-only wash-NEG-PAST
'Taro didn't wash only a car.'

(8) Taro [$_{\text{FocP}}$[$_{\text{NP}}$car-only] [$_{\text{NegP}}$[$_{\text{VP}}$$t_{\text{NP}}$ t_{V}] t_{NEG}]] wash-NEG-PAST

When the phrase with *-dake* is dropped, the focus reading is difficult as in (9b).

(9) a. Taro-wa zibun-no kuruma-dake arat-ta.
Taro-TOP self-GEN car-only wash-PAST
lit: 'Taro washed only self's car.'

b. Demo, Ziro-wa [e] arawa-nakat-ta.
However, Ziro-TOP wash-NEG-PAST
lit. 'However, Ziro didn't wash [e]. (*focus reading)

In (9b), it is very difficult to obtain the focus reading, unlike (7). Based on the observation, Funakoshi (2012) argues that only the V-stranding VP-ellipsis (VVPE) analysis gives a plausible explanation for why the focus reading is not available. If the phrase with *dake* moves to a focus position outside VP as shown in (8), the phrase is not in VP. In this situation, the phrase cannot be deleted by VVPE. According to Funakoshi, it is not obvious why the phrase cannot be deleted under the Argument Ellipsis (AE) analysis. As the relevant phrase is an argument, the phrase could be elided via AE.

However, Saito (2017) argues that it is not necessary that (9b) should be considered as evidence against AE if the null arguments are produced by a LF-copy analysis. The standard assumption of the LF-copy analysis is that an argument is null in overt syntax, and it is copied and covertly merged into an empty site at LF from a linguistic context without its phonological feature (Oku 1998, Sakamoto 2016). Saito (2017) proposes that any syntactic object forming an A'-chain cannot be copied onto an argument position. The phrase with *-dake* in (9a) must move to a focus position, and the movement creates an A'-chain. Hence, the phrase cannot be copied onto the empty slot in (9b). Therefore, Saito's analysis correctly predicts that the sentence in (9b) does not have the focus reading.

As we have observed in the previous section, the non-focus reading is available in (9b). I repeat (4) as (10).

(10) a. Taro-wa zibun-no kuruma-dake arat-ta.
Taro-TOP self-GEN car-only wash-PAST
lit: 'Taro washed only self's car.'

b. Demo, Ziro-wa [e] arawa-nakat-ta.
However, Ziro-TOP wash-NEG-PAST
lit. 'However, Ziro didn't wash [e]. ' (*focus reading / non-focus reading)

I argue that both VVPE analysis and Saito's analysis make a wrong prediction. First, let us consider the case of VVPE. As we have already discussed above, if the focus phrase *zibun-no kuruma-dake* 'self-GEN car-only' in (9b) moves to a focus position, the phrase has already moved out of the ellipsis target VP, so the phrase cannot be elided. If the explanation is plausible, it is not clear how the non-focus reading is derived. Second, Saito's analysis also faces a problem. Under his explanation, when the phrase with *-dake* undergoes movement to a focus position, the phrase creates an A'-chain. In this case, since any syntactic element cannot be copied onto the empty slot, it is not obvious what the non-focus reading is derived from.

In order to explain the availability of the non-focus reading in (5b) and (10b), following Shibata (2015), I propose that an element without *-dake* must be copied and covertly merged into an empty slot in a sentence. I claim that this proposal is closely connected with Morphological Merger. In the next section, I will introduce Shibata's analysis in detail.

3. Shibata (2015)

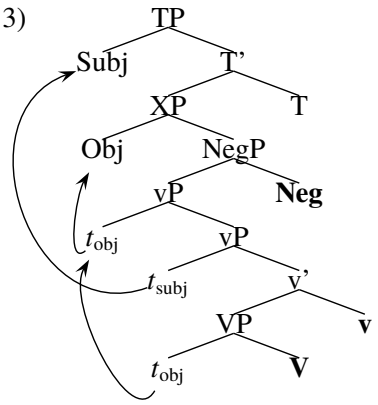
Shibata (2015) attempts to explain why a focus element takes an obligatory wide scope over the negation. Adopting the framework of the Distributed Morphology (Halle and Marantz 1993), Shibata (2015) claims that Morphological Merger derives a Japanese complex predicate (V-v-neg) from a predicative head. Moreover, he proposes that Morphological Merger must follow the structural adjacency. The followings are the definition of Morphological Merger and the structural adjacency in (11) and (12), respectively.

(11) *Complex head formation through Morphological Merger*
Head X and Y form one complex head through morphological merger if and only if X and Y are structurally adjacent. (Shibata 2015:146)

(12) *Structural Adjacency*
X and Y are structurally adjacent if and only if there is no overt Z, which is asymmetrically c-commanded by X and asymmetrically c-commands Y. (Shibata 2015:164)

He argues that the structural adjacency should be satisfied before Vocabulary Insertion (VI), which is the operation of the insertion of the phonetic information. VI happens after the syntax. As seen from the head in vP, overt left-side elements (e.g., subject and adjunct) interfere with the structural adjacency. Hence, an overt element must go over the NegP, but a non-phonetic element does not have to move. [2] Let us show the schema on Morphological Merger (I slightly modified Shibata's diagram):

(13)



(V-v-Neg forms one complex predicate) (Shibata 2015:137)

One may wonder why an object, where is a complement of V, must go over NegP. The concern seems to be plausible, because the complement position does not disrupt the adjacency between V and v. One possible way is that the complement position actually interferes with the structural adjacency. Suppose that V can be divided into $\sqrt{}$ and V, and an object will be merged with the upper V. In this

[2]It may be possible that tense particles also form a morphological unit in Japanese. Shibata (2015:152-157) assumes two possible solutions for this problem. One is to move elements in vP higher than T. The other is to assume that the apparent tense particles are actually lower heads than T, such as Asp. In this paper, I leave this issue open.

situation, the object must undergo movement, because the position must disrupt the adjacency between the upper V and the lower V which is merged with $\sqrt{}$. In this paper, I adapt the assumption that V is separated into $\sqrt{}$ and V.

Additionally, Shibata (2015) claims that when an overt element moves out of the negation because of the structural adjacency, the focus-operator acyclically sticks to the element. Fox (2003) assumes Trace Conversion, which consists of two syntactic operations.

(14) Trace Conversion (TC)

a. Variable Insertion: (Det) Pred → (Det) [Pred λy (y = x)]

b. Determiner Replacement: (Det) Pred → the [Pred λy (y = x)] (Shibata 2015:5)

In (14a), Variable Insertion inserts a variable into the lower copy, and Determiner Replacement replaces a determiner with a definite description in (14b). Note that the Determiner Replacement acts on determiners, so DP-external operators are not sensitive to Trace Conversion. Keeping this in mind, let us consider the case of a phrase with the focus particle *-dake*, as shown in (15).

(15) Taro-wa [ringo-dake] tabe-nakat-ta.
Taro-TOP apple-only eat-NEG-PST
'Taro didn't eat only an apple.'

(16) a. $[_{TP}$Taro $[_{XP}$apple-only $[\ _{NegP}[_{VP}$apple-only V] NEG]] T][3]

b. $[_{TP}$Taro $[_{XP}$only [x: x is an apple] $[\ _{NegP}[_{VP}$only [the y: y = x] V] NEG]] T]

Trace Conversion affects DPs, but not adnominal elements. If a phrase with the adnominal element such as *only* is based-generated inside vP, and it moves to a focus position, then the lower copy of the adnominal element cannot be affected by Trace Conversion. This derivation is not problematic for syntax, but the LF-representation is illegitimate for semantics. Shibata (2015) claims that the focus operator (only) acyclically sticks to the phrase (apple) after movement, as shown in (17).

(17) a. $[_{TP}$Taro $[_{XP}$apple $[\ _{NegP}[_{VP}$apple V] NEG]] T]

b. $[_{TP}$Taro $[_{XP}$apple-only $[\ _{NegP}[_{VP}$apple V] NEG]] T] ("Only" sticks to apple)

c. $[_{TP}$Taro $[_{XP}$only [x: x is an apple] $[\ _{NegP}[_{VP}$[the y: y = x] V] NEG]] T]

This derivation is not problematic for syntax, and LF-representation is also desirable for semantics. In addition, since the focus operator acyclically sticks to the element (apple) after movement, the lower copy of the element does not have the focus operator, and it can be converted into a trace. Hence, the element with *-dake* must take scope over negation.

[3]The gray part means the part in question is its copy in this paper.

4. Analysis

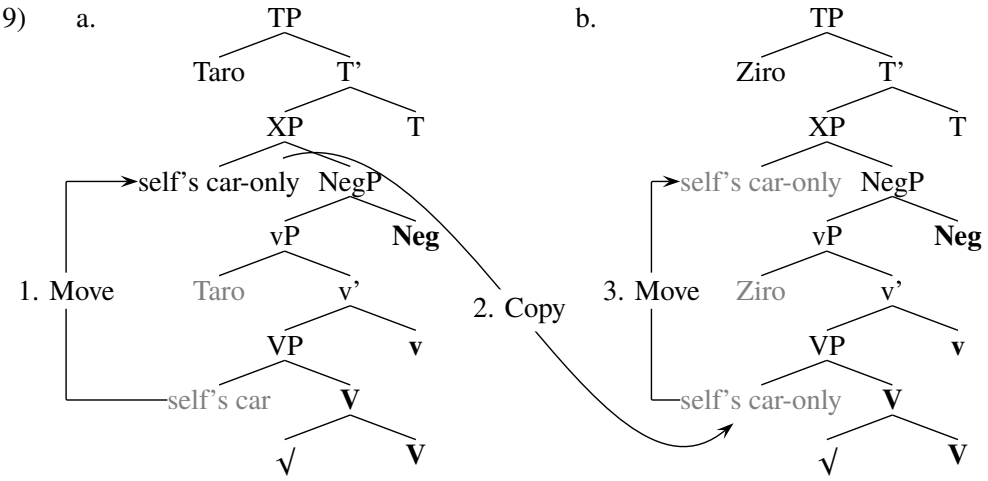
In this section, I would like to explain how the non-focus reading is derived. We repeat the example in (10) as (18).

(18) a. Taro-wa zibun-no kuruma-dake arat-ta.
Taro-TOP self-GEN car-only wash-PAST
lit: 'Taro washed only self's car.'

b. Demo, Ziro-wa [e] arawa-nakat-ta.
However, Ziro-TOP wash-NEG-PAST
lit. 'However, Ziro didn't wash [e]. ' (*focus reading / non-focus reading)

There are at least two derivations to copy the NP (self ' s car-(only)) onto an empty site in a second sentence. First, let us consider that the object **with** the focus operator *-dake* is copied onto the empty site in (18b). We illustrate the diagram in (19).

(19) a.

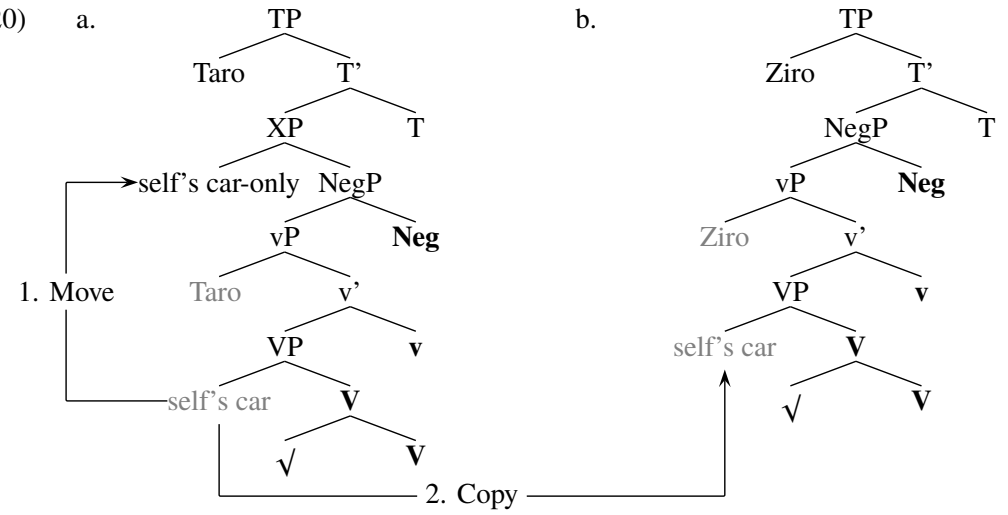


b.

The overt element in vP must move out of NegP because of the structural adjacency (1. Move). The element with the focus operator is copied onto an empty slot in the second sentence (2. Copy). Following Nakanishi (2006), I assume that the focus operators are basically sentential operators, so the operators must move to some position where it can take the proposition as a complement. When the object with the focus operator undergoes movement (3. Move), the object should leave its copy with the operator as in (19b). Since, the lower copy of the focus operator cannot be affected by Trace Conversion, the derivation should not be available.

Second, let us consider that the object **without** the focus operator is copied. We illustrate the diagram in (20).

(20) a. b.



Like (19a), the overt element in vP must undergo movement for the structural adjacency (1. Move). The element without the focus operator is copied (2. Copy). Since the copied element (self's car) does not have the focus operator, the element does not need to move. Hence, the non-focus reading should be available. In short, the derivation in (19) is unavailable, because the lower copy cannot be converted into a trace. On the other hand, the derivation in (20) does not have any problem for syntax and semantics. Therefore, we can obtain only the non-focus reading in (18b).

Next, Let us turn to the example in (5), where the element with the focus operator is in the subject position. We repeat (5) as (21).

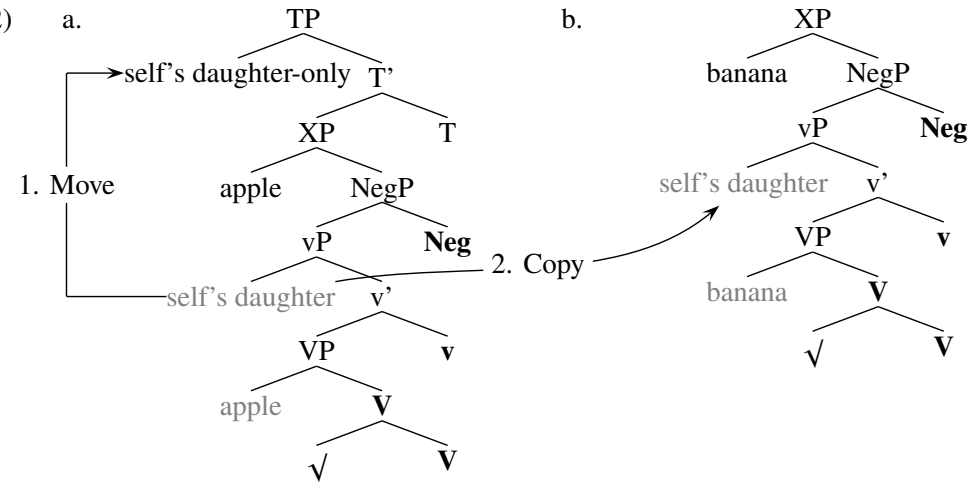
(21) a. Hanako-wa [zibun-no musume-dake ringo-o tabe-nakat-ta to] omotte-iru.
Hakako-TOP self-GEN daughter-only apple-ACC eat-NEG-PAST that think-PRES
lit. 'Hanako thinks only self's daughter didn't eat an apple.'

b. Demo, Ziro-wa [[e] banana-o tabe-nakat-ta to] omotte-iru.
However, Ziro-TOP banana-ACC eat-NEG-PAST that think-PRES
lit. 'However, Ziro thinks [e] didn't eat a banana.'

There are also two derivations to copy the subject onto an empty site in (21b). Let us suppose that the subject with the focus operator is copied and then the copied subject with the operator undergoes movement to a focus position. At that time, the subject should leave its copy with the operator. As we have seen in (19), however, the derivation is illicit, because the copy with the operator cannot be converted into a trace. Hence, we cannot help copying the subject without O_{ALT} onto the empty site in (21b). The derivation of (21) is illustrated in (22).[4]

[4]I will skip CP-node in the diagram, because CP-node is not important in this discussion.

(22) a. b.



The overt element in vP must rise above NegP (1. Move), and the element without the focus operator is copied (2. Copy). The element does not need to undergo movement, because the copied subject (self's daughter) does not include the focus operator. Since the derivation is available, we can get the non-focus reading in (21b).

5. Conclusion

This paper has discussed the question of why only the non-focus reading is available when an argument with *-dake* is null. Following Shibata (2015), I claimed that only an element without *-dake* can be copied onto an empty site in a sentence. If an element with *-dake* is copied and it must undergo movement, then the lower copy of the copied element in the sentence cannot be converted into a trace. Therefore, we cannot obtain the focus reading when the element with *-dake* is dropped.

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